REMARKS/ARGUMENTS

Applicants amended claims 20 and 22 to correct punctuation.

1. Claims 1-3, 6-9, 10-12, 15-18, 19-21, 23-25, and 28-31 are Patentable Over the Cited Art

The Examiner rejected claims 1-3, 6-12, 15-21, 23-25, and 28-31 as anticipated (35 U.S.C. §102(b0) by Lawrence (U.S. Patent No. 6,253,300). Applicants traverse for the following reasons.

Claims 1, 10, 19, and 23 require: receiving an I/O request to an object in storage; defragmenting the object in storage so that blocks in storage including the object are contiguous in response to receiving the I/O request; and executing the I/O request with respect to the object in storage.

The Examiner cited col. 5, lines 37-42 of Lawrence as teaching the claim requirement of defragmenting the object in storage so that blocks in storage including the object are contiguous in response to receiving the I/O request. (Office Action, pg. 3)

The cited col. 5 mentions that each file is stored in several locations separated by regions of the storage medium that do not hold the file's contents and that fragmentation can be alleviated or eliminated by running a defragmentation program on the files before copying them.

Nowhere does this cited col. 5 anywhere disclose that the object is defragmented so that blocks of the object are contiguous in storage in response to receiving the I/O request. The cited col. 5 mentions that a defragmentation program can be run on files before copying them. Although one may run a defragmentation program at any time, after or before copying or updating data, the cited col. 5 still does not disclose defragmenting an object in response to receiving an I/O request to the object to defragment. Instead, the cited col. 5 mentions that a file may be defragmented before copying, which does not disclose defragmenting in response to receiving an I/O request to the object.

Accordingly, claims 1, 10, 19, and 23 are patentable over the cited art because the cited Lawrence does not disclose all the claim requirements.

Claims 2, 3, 6-9, 11, 15-18, 20, 21, 24, 25, and 28-31 are patentable over the cited art because they depend from one of claims 1, 10, 19, and 23, which are patentable over the cited art for the reasons discussed above. Moreover, the following of these dependent claims provide additional grounds of patentability over the cited art.

Claims 3, 12, 20, and 25 depend from claims 1, 10, and 23 and further require determining whether an amount of fragmentation of the object in the storage exceeds a fragmentation threshold in response to receiving the I/O request, wherein the object is defragmented if the amount of fragmentation exceeds the fragmentation threshold.

The Examiner cited col. 5, lines 37-39 as disclosing the additional requirements of these claims. (Office Action, pg. 4) Applicants traverse.

The cited col. 5 mentions that fragmentation can be eliminated or alleviated by running a defragmentation program on the files before copying them. Nowhere does this cited col. 5 anywhere disclose determining whether an amount of fragmentation of an object exceeds a threshold in response to receiving an I/O request. The cited col. 5 mentions that one may run the defragmentation program to alleviate or eliminate fragmentation before copying files. However, this does not disclose making a determination whether fragmentation exceeds a threshold in response to an I/O request.

The Examiner made the statement that determining whether fragmentation exceeds a threshold can be "any amount of fragmentation higher than zero" and that defragmentation is performed "if fragmentation exists". (Office Action, pg. 4) Applicants submit that the understanding that defragmentation is performed if fragmentation exists does not disclose the specification claim requirement that defragmentation occurs in response to determining that a threshold is exceeded in response to an I/O request. There is no disclosure or mention of the combination of specific requirements of determining whether a threshold is exceeded in response to an I/O request before doing the defragmentation.

Accordingly, claims 3, 12, 20, and 25 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Lawrence.

Claims 6, 15, and 28 depend from claims 1, 10, and 23 and further require determining at least one logical partition including the object, wherein the object is defragmented if the object is within one logical partition.

The Examiner cited col. 5, lines 37-40 of Lawrence as disclosing the additional requirements of these claims. (Office Action, pg. 4) Applicants traverse.

The cited col. 5 mentions that fragmentation can be eliminated or alleviated by running a defragmentation program on the files before copying them.

Nowhere does the cited col. 5 anywhere disclose or mention defragmenting the object in response to determining that the object is included within one logical partition.

The Examiner referenced the statement at line 40 of "a directory for each file". This cited statement mentions that there is a need to revisit a directory even if every file in the directory is defragmented. Nowhere is there any disclosure or mention in the cited col. 5 of the specific claim requirement of determining at least one logical partition including the object subject to the I/O request and then defragmenting if the object is within one logical partition.

Accordingly, claims 6, 15, and 28 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Lawrence.

Claims 7, 16, and 29 depend from claims 1, 10, and 23 and further require determining whether the object is read-only, wherein the object is defragmented if the object is not read-only.

The Examiner found that it was inherent that defragmentation is only performed for "not-write protected" objects because defragmentation involves copying/deleting an object to a different location. (Office Action, pg. 4) Applicants traverse.

Applicants submit that the Examiner has not shown where the Lawrence discloses that defragmentation is not performed with respect to write protected data, i.e., that a defragmentation operation overrides the "write protection" feature.

Applicants further traverse the Examiner's "inherency" finding. According to the Manual of Patent Examination and Procedure (MPEP), the "fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." MPEP Sec. 2112, pg. 57 (Aug. 2005, Rev. 3). Applicants submit that it is not "inherent" that write protection overrides defragmentation because the software designer may make that design choice in designing the defragmentation program. Applicants submit that the Examiner has not cited any art that shows that one cannot design a system so that defragmentation overrides a "read only" attribute for a file.

Accordingly, claims 7, 16, and 29 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Lawrence.

Amended claims 8, 17, and 30 depend from claims 1, 10, and 23 and further require operations of receiving the I/O request, initiating the operation to defragment the object, and

executing the I/O request of defragmenting the object in storage is performed by a storage controller managing I/O requests to the storage.

Applicants amended these claims to require that the operations of receiving the I/O request , initiating the operation to defragment the object, and executing the I/O request of defragmenting the object in storage is performed by a storage controller managing I/O requests to the storage. FIG. 1 shows the I/O logic and defragmenter logic in the storage controller which performs these claimed operations. (Specification, FIGs. 1 and 2, paras. [0011]-[0014]). Applicants also note that independent claim 19 also requires these operations performed by the storage controller.

The Examiner found that that Lawrence discloses this requirement because the defragmentation occurs in a computer and the computer inherently includes a storage controller and device driver. (Office Action, pgs. 4-5) Applicants traverse because there is nothing inherent that defragmentation be initiated by the storage controller as opposed to some program running in the computer. As discussed, the "fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." Thus, the fact that defragmentation "may" be initiated in the storage controller as opposed to a program in the computer makes this finding of inherency inappropriate.

Applicants submit that the Examiner has not cited any part of Lawrence that discloses that the storage controller initiates defragmentation in response to the I/O request. Thus, claims 8, 17, and 30 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Lawrence.

Claims 9, 18, and 31 depend from claims 1, 10, and 23 and further require that the operation of defragmenting the object in storage is performed by a device driver for the storage providing an interface to the storage.

As with claims 8, 17, and 30, the Examiner's finding of inherency is inappropriate because there can be no inherency because the defragmentation may be performed by application programs or other components. Thus, it is not inherent that a device driver perform the defragmentation.

Applicants submit, the Examiner has not cited any part of Lawrence that discloses that a device driver performs the operation of defragmentation. Thus, claims 9, 18, and 31 provide

additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Lawrence.

2. Claim 22 is Patentable Over the Cited Art

The Examiner rejected claim 22 as obvious (35 U.S.C. §103(a)) as obvious over Lawrence in view of Karger (U.S. Patent No. 5,339,449).

Applicants submit that claim 22 is patentable over the cited art because it depends from claim 19, which is patentable over the cited art for the reasons discussed above.

3. Claims 4, 5, 13, 14, 26, and 27 are Patentable Over the Cited Art

The Examiner rejected claims 4, 5, 13, 14, 26, and 27 as obvious over Lawrence in view of Douglis (U.S. Patent Pub. No. 2005/018075). Applicants traverse.

Applicants submit that these claims are patentable over the cited art because they depend from one of claims 1, 10, and 23, which are patentable over the cited art for the reasons discussed above. Moreover, the below discussed dependent claims provide additional grounds of patentability over the cited art for the following reasons.

Claims 4, 13, and 26 depend from claims 1, 10, and 23, respectively, and further require determining whether a user settable flag indicates to perform defragmentation in response to receiving the I/O request, wherein the object is defragmented if the flag indicates to perform defragmentation.

The Examiner cited para. [0032] of Douglis as teaching the additional requirements of these claims.

The cited para. [0032] discusses a power-aware monitor that monitors applications to defer execution of non-critical background tasks, that may be daemons or other application and whose execution is desirable only when there is not a restriction on power usage. Examples include full disk virus scans and defragmentation, among others.

Although the cited para. [0032] discusses a power monitor deferring defragmentation to execute when there is no restriction on power usage, nowhere does the cited para. [0032] anywhere teach or suggest a user settable flag that indicates to perform defragmentation in response to receiving the I/O request. Instead, the cited para. [0032] discusses deferring

defragmentation for power management concerns, not indicating whether to perform a defragmentation in response to an I/O request as claimed.

Accordingly, claims 7, 16, and 29 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Lawrence or Douglis.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-31 are patentable over the art of record. Applicants have not added any claims. Nonetheless, should any additional fees be required, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

Dated: July 20, 2006

By: /David Victor/

David W. Victor
Registration No. 39,867

Please direct all correspondences to:

David Victor
Konrad Raynes & Victor, LLP
315 South Beverly Drive, Ste. 210
Beverly Hills, CA 90212
Tel: 310-553-7977
Fax: 310-556-7984